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Stereochemistry of organophosphorus compounds Communication 9. Study of the NMR-1H and32P method of the configuration and conformation of cyclic phosphites based on dimethyl esters of D- and mesotartaric acids

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Abstract

1. Trans- and cis-orientations of the carbomethoxyl substituents at the C4 and C5 atoms in 1,3,2-dioxaphospholanes, synthesized on the basis of esters of D- and mesotartaric acids, respectively, were confirmed. 2. Conformation lability of the five-membered heterocycle of the compounds studied was demonstrated in the interval from -80 to 28°; on the basis of the vicinal spin-spin interaction constants3JPOCH and3JHCCH and their temperature dependence, conclusions were drawn on the most probable conformations, among which the pseudoconversion chiefly occurs. 3. On the basis of the heteronuclear Overhauser effect1H-{31P} and the paramagnetic shifts induced by Eu(DPM)3 and the aromatic solvent, information was obtained in support of a pseudoaxial arrangement of the substituents at the phosphorus atom.

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